UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,247	01/22/2004	Hasan Nejad	M4065.0513/P513-A	2010

			EXAMINER
24998	7590	07/13/2006	PRENTY, MARK V

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ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/761,247	NEJAD ET AL.
	Examiner	Art Unit	
	MARK PRENTY	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-51 and 54-65* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *47-51 and 55-58* is/are rejected.

7)☒ Claim(s) *41-46 and 54-65* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

This Office Action is in response to the amendment filed on June 26, 2006.

Independent claim 41 is objected to because it is unclear. Specifically, claim 41's "an electroplated bottom sense layer over said conductive line, the electroplated bottom sense layer being formed in openings that extend longitudinally over said conductive line, where said openings are trenches," is unclear because the openings refer to the now deleted dielectric layer. Such should instead read, "an electroplated bottom sense layer extending longitudinally over said conductive line."

Claims 42-46 and 54 depend on claim 41 and are thus similarly objected to. Claim 54 is further objected to because "the dielectric layer" lacks antecedent basis.

Independent claim 55 is objected to because it is unclear. Specifically, claim 55's "an electroplated ferromagnetic layer over said conductive line, the electroplated ferromagnetic layer being formed in openings that extend longitudinally over said conductive line, where said openings are trenches," is unclear because the openings refer to the now deleted dielectric layer. Such should instead read, "an electroplated ferromagnetic layer extending longitudinally over said conductive line."

Claims 56-60 depend on claim 55 and are thus similarly objected to.

Independent claim 61 is objected to because it is unclear. Specifically, claim 61's "the bottom sense layer being formed in openings that extend longitudinally over said planarized conductor, where said openings are trenches," is unclear because the openings lack context. Such should instead read, "the bottom sense layer extending longitudinally over said planarized conductor."

Claims 62-65 depend on claim 61 and are thus similarly objected to.

Claims 47-51 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Specifically, independent claim 47 is not enabled because it recites a processor-based system comprising a dielectric layer that is removed before the system is completed. See Figs. 11-14's "sacrificial" dielectric layer 63 (specification at paragraph [0045]), and note that it is removed (Fig. 15) before the system is completed. Claims 48-51 depend on claim 47 and are thus similarly rejected.

Claims 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,743,641 to Yates et al. (Yates) together with United States Patent 6,555,858 to Jones et al. (Jones).

As to independent claim 55, Yates discloses a magnetic random access memory structure (see the entire patent, including the Fig. 21 disclosure) comprising: a longitudinally extending planarized conductive line 62 formed within an insulating layer 54; a ferromagnetic layer 91 extending longitudinally over said conductive line; a nonmagnetic tunnel barrier layer 80 over said ferromagnetic layer; an upper ferromagnetic layer 92 over said nonmagnetic layer; and at least one electrical conductor 93 in contact with said upper layer.

The "difference" between claim 55 and Yates is claim 55's lower ferromagnetic layer is formed by electroplating while Yates's lower ferromagnetic layer 91 (layer 79 in Fig. 14) is formed by "conventional deposition methods" (see column 6, lines 4-18).

Jones teaches that electroplating is a conventional deposition method in the semiconductor device art (see column 4, lines 14-16).

It would have been obvious to one skilled in this art to form Yates's lower ferromagnetic layer 79/91 by electroplating because Yates discloses that it is formed by "conventional deposition methods" and Jones teaches that electroplating is a conventional deposition method in the semiconductor device art.

Claim 55 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Yates together with Jones.

As to dependent claim 56, Yates's electroplated ferromagnetic layer 79/91 is formed of NiFe (see column 6, lines 4-18).

Claim 56 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Yates together with Jones.

As to dependent claim 57, Yates's insulating layer 54 is selected from the group consisting of BPSG, SiO, SiO_2, Si_3N_4 and polyimide (see column 4, lines 1-15).
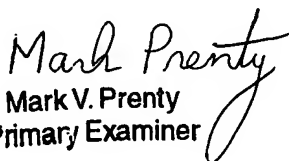
Claim 57 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Yates together with Jones.

As to dependent claim 58, Yates's nonmagnetic layer 80 is aluminum oxide (see column 6, lines 19-29).

Claim 58 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Yates together with Jones.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

Mark Prenty
Mark V. Prenty
Primary Examiner